Multiple Choice Questions

Choose 2

1. On a given school day, the probability that Nick oversleeps is 48% and the probability he has a pop quiz is 25%. Assuming these two events are independent, what is the probability that Nick oversleeps and has a pop quiz on the same day?

(1) 73%
(2) 36%
(3) 23%
(4) 12%

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2. Which binomial is *not* a factor of the expression $x^3 - 11x^2 + 16x + 84$?

(1) $x + 2$
(2) $x + 4$
(3) $x - 6$
(4) $x - 7$

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3. The inverse of the function $f(x) = \frac{x+1}{x-2}$ is

(1) $f^{-1}(x) = \frac{x+1}{x+2}$
(2) $f^{-1}(x) = \frac{2x+1}{x-1}$
(3) $f^{-1}(x) = \frac{x+1}{x-2}$
(4) $f^{-1}(x) = \frac{x-1}{x+1}$

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4. The solutions to the equation $5x^2 - 2x + 13 = 9$ are

(1) $\frac{1}{5} \pm \frac{\sqrt{21}}{5}$
(2) $\frac{1}{5} \pm \frac{\sqrt{19}}{5}i$
(3) $\frac{1}{5} \pm \frac{\sqrt{66}}{5}i$
(4) $\frac{1}{5} \pm \frac{\sqrt{66}}{5}$

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5. A savings account, S, has an initial value of \$50. The account grows at a 2% interest rate compounded n times per year, t, according to the function below.

$$S(t) = 50\left(1 + \frac{.02}{n}\right)^{nt}$$

Which statement about the account is correct?

(1) As the value of n increases, the amount of interest per year decreases.
(2) As the value of n increases, the value of the account approaches the function $S(t) = 50e^{0.02t}$.
(3) As the value of n decreases to one, the amount of interest per year increases.
(4) As the value of n decreases to one, the value of the account approaches the function $S(t) = 50(1 - 0.02)^t$.

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